

What is claimed is:

1. Modified polypropylene (A1) having a melt flow rate (ASTM D1238, 230°C, load of 2.16 kg) of 0.1 to 10 g/10 min, a melt tension of 3 to 20 g and a gel fraction, as determined by boiling paraxylene extraction, of 0.01 to 25 % by weight.

2. The modified polypropylene (A1) as claimed in claim 1, which is obtained by melt kneading 98.5 to 99.7 % by weight of polypropylene (B1) having a melt flow rate of 0.4 to 15 g/10 min and 0.3 to 1.5 % by weight of a peroxydicarbonate (C) at a temperature of 170 to 250°C.

3. The modified polypropylene (A1) as claimed in claim 2, wherein the peroxydicarbonate (C) is bis(4-t-butylcyclohexyl) peroxydicarbonate.

4. The modified polypropylene (A1) as claimed in claim 2, wherein the peroxydicarbonate (C) is dicetyl peroxydicarbonate.

5. A process for preparing modified polypropylene (A2), comprising melt kneading polypropylene (B2) and a peroxydicarbonate (C) using an extruder at a temperature of 170 to 250°C in such a manner that the specific energy

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(E_{sp}) becomes 0.25 to 0.8 kW·hr/kg to prepare modified polypropylene (A2) having a melt flow rate (ASTM D1238, 230°C, load of 2.16 kg) of 0.1 to 10 g/10 min, a melt tension of 3 to 20 g and a gel fraction, as determined by
5 boiling paraxylene extraction, of 0.01 to 25 % by weight.

6. The process for preparing modified polypropylene (A2) as claimed in claim 5, wherein the extruder is a twin-screw extruder.

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7. The process for preparing modified polypropylene (A2) as claimed in claim 6, wherein at least one kneading section is provided in the screw arrangement of the twin-screw extruder.

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8. The process for preparing modified polypropylene (A2) as claimed in any one of claims 5 to 7, wherein the peroxydicarbonate (C) is bis(4-t-butylcyclohexyl) peroxydicarbonate.

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9. The process for preparing modified polypropylene (A2) as claimed in any one of claims 5 to 7, wherein the peroxydicarbonate (C) is dicetyl peroxydicarbonate.

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10. A process for preparing modified polypropylene (A3), comprising melt kneading polypropylene (B1), a polypropylene crosslinking type peroxide (D) and a polypropylene decomposition type peroxide (E) at a temperature of 160 to 250°C.

11. The process for preparing modified polypropylene (A3) as claimed in claim 10, wherein the polypropylene crosslinking type peroxide (D) is a peroxydicarbonate.

12. The process for preparing modified polypropylene (A3) as claimed in claim 11, wherein the peroxydicarbonate is bis(4-t-butylcyclohexyl) peroxydicarbonate.

13. The process for preparing modified polypropylene (A3) as claimed in claim 11, wherein the peroxydicarbonate is dicetyl peroxydicarbonate.

14. The process for preparing modified polypropylene (A3) as claimed in any one of claims 10 to 13, wherein the polypropylene decomposition type peroxide (E) is a dialkyl peroxide.

15. The process for preparing modified polypropylene (A3) as claimed in claim 14, wherein the dialkyl peroxide is 2,5-dimethyl-2,5-bis(t-butylperoxy)hexane.

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16. A process for preparing modified polypropylene (A4), comprising melt kneading polypropylene (B1) and a polypropylene crosslinking type peroxide (D) at a temperature of 160 to 250°C and then melt kneading the
10 resulting kneadate and a polypropylene decomposition type peroxide (E) at a temperature of 160 to 250°C.

17. The process for preparing modified polypropylene (A4) as claimed in claim 16, wherein the
15 polypropylene crosslinking type peroxide (D) is a peroxydicarbonate.

18. The process for preparing modified polypropylene (A4) as claimed in claim 17, wherein the
20 peroxydicarbonate is bis(4-t-butylcyclohexyl) peroxydicarbonate.

19. The process for preparing modified polypropylene (A4) as claimed in claim 17, wherein the
25 peroxydicarbonate is dicetyl peroxydicarbonate.

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20. The process for preparing modified polypropylene (A4) as claimed in any one of claims 16 to 19, wherein the polypropylene decomposition type peroxide
5 (E) is a dialkyl peroxide.

21. The process for preparing modified polypropylene (A4) as claimed in claim 20, wherein the dialkyl peroxide is 2,5-dimethyl-2,5-bis(t-
10 butylperoxy)hexane.

22. A modified polypropylene composition (F1) comprising:

(B3) polypropylene, and
15 (A1) the modified polypropylene of any one of claims 1 to 4,

wherein the polypropylene (B3) is contained in an amount of 1 to 99 % by weight and the modified polypropylene (A1) is contained in an amount of 99 to 1 %
20 by weight, the total of said components (A1) and (B3) being 100 % by weight.

23. A modified polypropylene composition (F2) comprising:

25 (G) high-pressure low-density polyethylene, and

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(A1) the modified polypropylene of any one of claims
1 to 4,

wherein the high-pressure low-density polyethylene
(G) is contained in an amount of 50 to 1 % by weight and
5 the modified polypropylene (A1) is contained in an amount
of 50 to 99 % by weight, the total of said components (G)
and (A1) being 100 % by weight.

24. A foamed product obtained from the modified
10 polypropylene (A1) of any one of claims 1 to 4.

25. A foamed product obtained from the modified
polypropylene (A2) prepared by the process of any one of
claims 5 to 9.

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26. A foamed product obtained from the modified
polypropylene (A3) prepared by the process of any one of
claims 10 to 15.

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27. A foamed product obtained from the modified
polypropylene (A4) prepared by the process of any one of
claims 16 to 21.

28. A foamed product obtained from the modified
25 polypropylene composition (F1) of claim 22.

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29. A foamed product obtained from the modified polypropylene composition (F2) of claim 23.

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